DEFENSE SUPPLY CENTER RICHMOND

...THE BEST IN WEAPON SYSTEMS SUPPORT

The Defense Logistics Agency
Flight Safety Critical Aircraft Parts Program
(FSCAP)

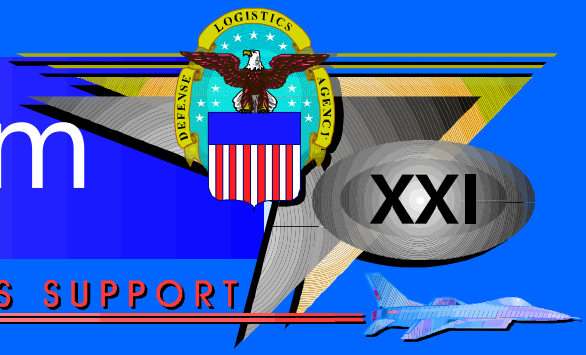
Army

Navy

Air Force

US Coast Guard

FSCAP Program



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- **Office, Deputy Under Secretary Defense (Logistics)**

- **To Ensure Only Safe Parts**
  - **are installed on military aircraft.**
  - **are released to the civil aircraft market.**

BACKGROUND

GAO Reports

Commercial Practices:
Opportunities Exist to Enhance DoD's Sale of Surplus Aircraft Parts, GAO/NSIAD-94-189

Defense Inventory:
Action Needed to Avoid Inappropriate Sales of Surplus Parts, GAO/NSIAD-98-182

Policy

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- DoD 4140.1R Materiel Management Regulation
- DoD 4160.21-M Defense Materiel Disposition Manual
- Army: AMCOM Reg. 702-7 FSP/NST Program Mngt
- Navy: NAVAIR INST 4200.25 Mngt of CSI and CAI
- Air Force: AFM 23-110 Vol. 6 Ch 10 FSCAP Prgm
- DRMS-I 4160.14 Warehous
- DRMO

DoD 4140.1R

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- **Acquisition Materiel Management**
  - All items shall conform fully to contract specifications especially for Critical Application Items (CAI)
    - FSCAP items is a subset of CAI .
- **DoD FSCAP Program**
  - Identify FSCAP, Services, AAA & ESAs
  - Control FSCAP throughout life-cycle, ICPs and Services
  - Release only safe parts for disposal, Services & DRMO
  - Provide only safe parts for installation on aircraft, ICPs and ESAs
  - Designate an Aircraft Airworthiness Authority, Services
  - Implement FSCAP Program, ICPs & Services and
  - Use the FSCAP definition, ALL.
  - Code items in the FLIS as FSCAP (“E” or “F”)

Flight Safety Parts (FSP)

CCAD Overhaul and Maintenance (O&M)

Depot Production Lines
Parts required for Bill of Material

DDC
Depot Distribution Centers, Parts Storage

PICAs
DLA, Army, Navy, AF
S9C, S9E, S9G, S9I, S9P
B17, B64
N32
FHZ

Services Forecasts
DLA Managed Items:
Army, Navy, AF for O&M projects
Bill of Materials (BOM)

ESAs
Services' Engineering Support Activities, and DSP Preparing Activiti

O&M Project for Army Navy or Air Force

Receives parts from all PICAs issuable assets for Depots production programs or any other requisitioner

Supply Functions Contracting Functions

Supply Item Special Program Requirements (SPRs) un-funded for O&M project BOM

Engineering Function

Overhauled or Repaired Aircraft ready for re-issue to an Operational Combat Units

PICA Contracts
Contract Sections

A.
B. Supplies/Service and Price/Cost *
C. Specification
D. Packaging & Marking
E. Inspection & Acceptance
F.
G.
H. Special Contract Requirements
I. Contract Clauses
J. List of Attachments
K. Certifications
L.
M.

Technical Data
Technical Data Packages,
Specifications,
Drawings,
Aviation Directives,
DMWR,
MilSpecs,
MilStds & NGS,
Service Standards,
Packaging Specs,
Quality Assurance Procedu
(QAP)
Qualified Sources
Source Control
Source Approval
DSP Qualification
Qualifying Activity

When used or un-documented & listed in FLIS as FSCAP then DRMO will Mutilate, else.

Parts
Delivered by Contractor

Navy & Af O&M CCAD Programs forecasts is a manual process.

* Section C information will be found in Section B for DLA contracts.

JJ Oliver, DSCR-VEE, 804-279-4799

ARMY
FSP / NST

DSCRichmond ...THE BEST IN WEAPON SYSTEMS SUPPORT

- **Army Regulation 750-1 “Maintenance of Supplies and Equipment”** Paragraph 4.46 the “**Component Safety Program**”.
  - **Critical safety items** must be identified and controlled throughout a product's life cycle.
  - Considerable attention must be given to ensuring that these items conform to design requirements during manufacturing and reconditioning. In addition, items in transport, storage, or use must be assessed for retention of the **critical safety characteristics**. This provides a proactive approach to eliminating unsafe conditions. Implementation of the critical safety program should, where applicable, build on existing requirements such as MIL-STD-1629, MIL-STD-785, and MIL-STD-882. Mil-Std-1629 "Procedures for Performing a Failure Mode and Criticality Analysis" was canceled August 1998 by the Defense Standardization Program Office.
    - Mil-Std-785 "Reliability Program for Systems and Equipment Development and Production" was canceled 24 August 1998 by the DoD Defense Standardization Program Office.
    - Mil-Std-882 "System Safety" Revision D makes the process and many of the term non-mandatory. The term “Hazardous Severity” is now “Mishap Severity”

ARMY
FSP / NST

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- **AMCOM Regulation 702-7 Flight Safety Parts / New Source Testing Program Management**
  - Implements for Army aviation the
    Army Component Safety Program and
    The DoD FSCAP Program.

Air Force Supply

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- **AF Policy Dir. 23-5 Reusing and Disposing of Materiel**
  - Para 5 The Air Force will identify and apply world \wide controls over: …
  - 5.2 Flight Safety Critical Air Craft Parts (FSCAP) in order to prevent transfer or disposal of unsafe FSCAP materiel. …

    maintain historical maintenance records …

    mutilate unsafe, undocumented FSCAP.
- **AF Man 23-110 US Air Force Supply Manual**
  - **Volume 6 Excess and Surplus Personal Property**
  - **Chapter 10 FSCAP Program**

    Inventory Control Point IMs will work with the Single Manager engineering / equipment specialists to evaluate (approve) another Service's designations of Air Force managed item as FSCAP.

    Under phase 1, SMs are to identify only FSCAP reparable engine items.

    Under phase 2, SMs may identity FSCAP consumable items from the entire aircraft.

Air Force Single Manager

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- **Air Force Policy Directive 63-12 Assurance of Operational Safety, Suitability & Effectiveness (OSS&E)**
  - The Air Force will:
    - Assure the operational safety, suitability, and effectiveness of all systems and end-items currently in, or entering , the operational inventory.
    - Employ a disciplined systems management process, a disciplined engineering process, and effective operational, training, supply, and maintenance procedures to preserve the system and end-item OSS&E throughout the operational life. (a.k.a. the specification)

Air Force Single Manager

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- AF I 63-1201 OSS&E
- Paragraph 1.1.3. Configuration Management.
  - The specific configuration and its characteristics must be defined by engineering data at all times. (a.k.a. the specification)

Navy

- NAVAIR INSTRUCTION 4200.25 Management of Critical Safety Items (CSIs) and Critical Application Items (CAIs)
  - Currently under active revision.
  - Navy proposing to:
    - Make Critical Safety Items and FSCAP synonymous terms and
    - Implement certain elements of the DoD FSCAP program under the Navy's Critical Safety Items Program.

FSCAP DEFINITION

Any aircraft part, assembly, or installation containing a Critical Characteristic whose failure, malfunction, or absence may cause a catastrophic failure resulting in loss or serious damage to the aircraft
or an uncommanded engine shutdown resulting in an unsafe condition.

- **Critical Characteristic.** Any feature throughout the life cycle of a FSCAP, such as dimension, tolerance, finish, material or assembly, manufacturing or inspection process, operation, field maintenance, or depot overhaul requirement that if non-conforming, missing or degraded may cause the

FSCAP DEFINITIONS

FAA

- **Dual Use Product/Part.**
  - CAGE and P/N same
  - Manufacturer a FAA Approved type design or PAH
  - FAA form 8130-3 Airworthiness Approval Tag provided
- **Military Unique FSCAP.**
  - No Corresponding FAA-Approved type design or PAH
- **Part Out.**
- **FSCAP** Same as DoD FSCAP definition

OSD FAA FSCAP PAT

- **Process Action Team Report dated 5/95**
- **Charter**
  - Process for identification of dual use FSCAP.
  - Appropriate documentation required to accompany all FSCAP at time of disposal/sale from DoD inventory.
  - Coding structure necessary to ensure that parts lacking appropriate documentation, because of configuration, or because of condition are identified and mutilated prior to disposal.

Charter continued

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- Method of ensuring interservice and interagency sharing of information relevant to sale of parts.
- Method to require recipients as a condition of transfer, donation, or sale to subject FSCAP to safety inspection, repair, and / or overhaul to FAA requirements prior to subsequent transfer.

FSCAP Program - Purpose

- **DoD 4140.1R Defense Materiel Management: Other Logistics Programs, FSCAP**

- **To Ensure Only Safe Parts**
  - **are installed on military aircraft.**
  - **are released to the civil aircraft market.**

DoD FSCAP Program Policy

Procedures

DSCRichmond ...THE BEST IN WEAPON SYSTEMS SUPPORT

- C6.5.2.1. All FSCAPs shall be **identified in the FLIS** by an applicable criticality code.

  - The Federal Logistics Information System (FLIS) a.k.a. Total Item Record (TIR), is the database of record, used to track 22,435 FSCAP NSNs. (Data as of October 2001)
  - The FLIS Crit_Code is type coded with “F” or “E” for FSCAP or nuclear harden FSCAP, respectively.
  - System Change Request (SCR) being proposed by DLIS

DoD 4100.39M Table 181
Criticality Code, Federal Item Identification Guide

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Classification FLIS Ciriticality Codes	Nuclear Harden	Nuclear Harden Critical Features	Nuclear Harden FSCAP	FSCAP	Critical Features	No Critical Features
Nuclear Harden	Yes	Yes	Yes	No	No	No
Critical Features		Yes		No	Yes	No
FSCAP			Yes	Yes		No
CRIT-CODE	H	M	E	F	Y	X
Old Codes					C	N

DLA Form 339 Block 19

DSCRichmond ...THE BEST IN WEAPON SYSTEMS SUPPORT

Classification FLIS Ciriticality Codes	Nuclear Harden	Nuclear Harden Critical Features	Nuclear Harden FSCAP	FSCAP	Critical Features	No Critical Features
CRIT-CODE	H	M	E	F	Y	X
DLA From 339 from ESA Block 19 Choices						
Critical Application Item (CAI)	?	???	?	?	Yes	
Flight Safety Critical (**Not** FSCAP)		?	???	???	?	
FSCAP			**Yes**	**Yes**		
Life Support Item		?			?	

DLA
Contract Tech Date File

DSCR Richmond ...THE BEST IN WEAPON SYSTEMS SUPPORT

Classification FLIS Ciriticality Codes	Nuclear Harden	Nuclear Harden Critical Features	Nuclear Harden FSCAP	FSCAP	Critical Features	No Critical Features
CRIT-CODE	H	M	E	F	Y	X
DLA SAMMS Coding						
CTDF CIC		???	???	???	Yes	
CTDF FSI			Yes	Yes		
CTDF SPC Code	???	???		???	Yes	
ALRE					Yes	
IRPOD	?	?			Yes	
NAVY CSI				???	Yes	

DoD FSCAP and Other

DSCRichmond ...THE BEST IN WEAPON SYSTEMS SUPPORT

Classification FLIS Ciriticality Codes	Nuclear Harden	Nuclear Harden Critical Features	Nuclear Harden FSCAP	FSCAP	Critical Features	No Critical Features
CRIT-CODE	H	M	E	F	Y	X
OSD **FSCAP** PAT Service Members Database of Identified Parts						
FSCAP			Yes	Yes		
CSI (Critical Safety Item, Mil-Std-100)	???	???	???	???	Yes	
SCI (Safety Critical Item, MilStd-882D)		???	???	???	Yes	

Classification FLIS Ciriticality Codes	**Nuclear Harden**	**Nuclear Harden Critical Features**	**Nuclear Harden FSCAP**	**FSCAP**	**Critical Features**	**No Critical Features**
Nuclear Harden	Yes	Yes	Yes	No	No	No
Critical Features		Yes		No	Yes	No
FSCAP			Yes	Yes		No
CRIT-CODE	**H**	**M**	**E**	**F**	**Y**	**X**
Old Codes					**C**	**N**
DLA From 339 from ESA Block 19 Choices						
Critical Application Item (CAI)	?	?	?	?	YES	
Flight Safety Critical (**Not** FSCAP)		?	???	???	?	
FSCAP			**Yes**	**Yes**		
Life Support Item		?			?	
DLA SAMMS Coding						
CTDF **CIC**		???	**???**	**???**	Yes	
CTDF **FSI**			Yes	Yes		
CTDF **SPC Code**	???	???		**???**	Yes	
ALRE					Yes	
IRPOD	?	?			Yes	
Navy CSI				Maybe	Yes	
OSD **FSCAP** PAT Service Members Database of Identified Parts						
FSCAP			Yes	Yes		
CSI (Critical Safety Item, Mil-Std-100)	???	???	???	???	Yes	
SCI (Safety Critical Item, MilStd-882D)		???	???	???	Yes	

Status of Services' Updates

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Service	May-99	Feb-00	Jun-00	Nov-00	Future Updates
Army	Yes	Mar-00	Yes		Quarterly, Established
Navy	Yes	Dec-99	None		None
Air Force	Phase 1 Engines Only		Phase 2 Structural Released July 2000		C-17
US Coast Guard	yes	Pending		C-130H, H-60J, HU-25 Jet, H-65A	Quarterly, Established

FSCAP Data Flow

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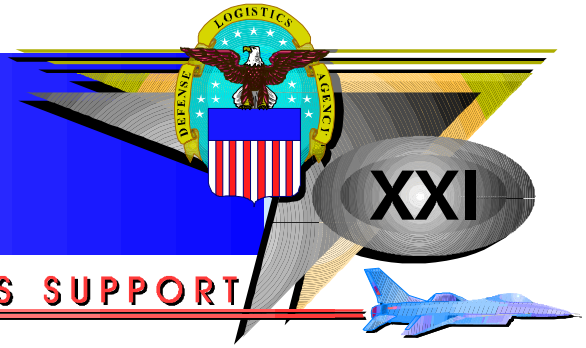

AMCOM
Flight Safety Parts
Program
Data

Army FSPs
Plus Obsolete FSPs
FSCAP
Quarterly Updates

OSD / FAA
FSCAP PAT
Chair

DSCR
Stood up FSCAP Site
Per Request
ALB / JACG Request
Distribution
to DSCs

NAVAIR Log,
NAVICP-P
Provided Data

Navy
NAVAIR Log

FLIS
Crit_Code
Update to "F"

Responsible
Service / DLA PICPs
Managing
FSCAP

Single Managers
Prgm Mngrs
ESAs
Provided Data

Air Force
AFMC/LGIA
Provided
Engine Lists, Ph 1
Structural Lists Ph 2

DMRO
Mutilate Used FSCAP
Sell New FSCAP
to surplus dealers for
possible entry into civilian
FAA Market

Service
ESAs
Providing
Criticality Status via
DLA form 339

US Coast Guard

Graph of DoD and FLIS FSCAP

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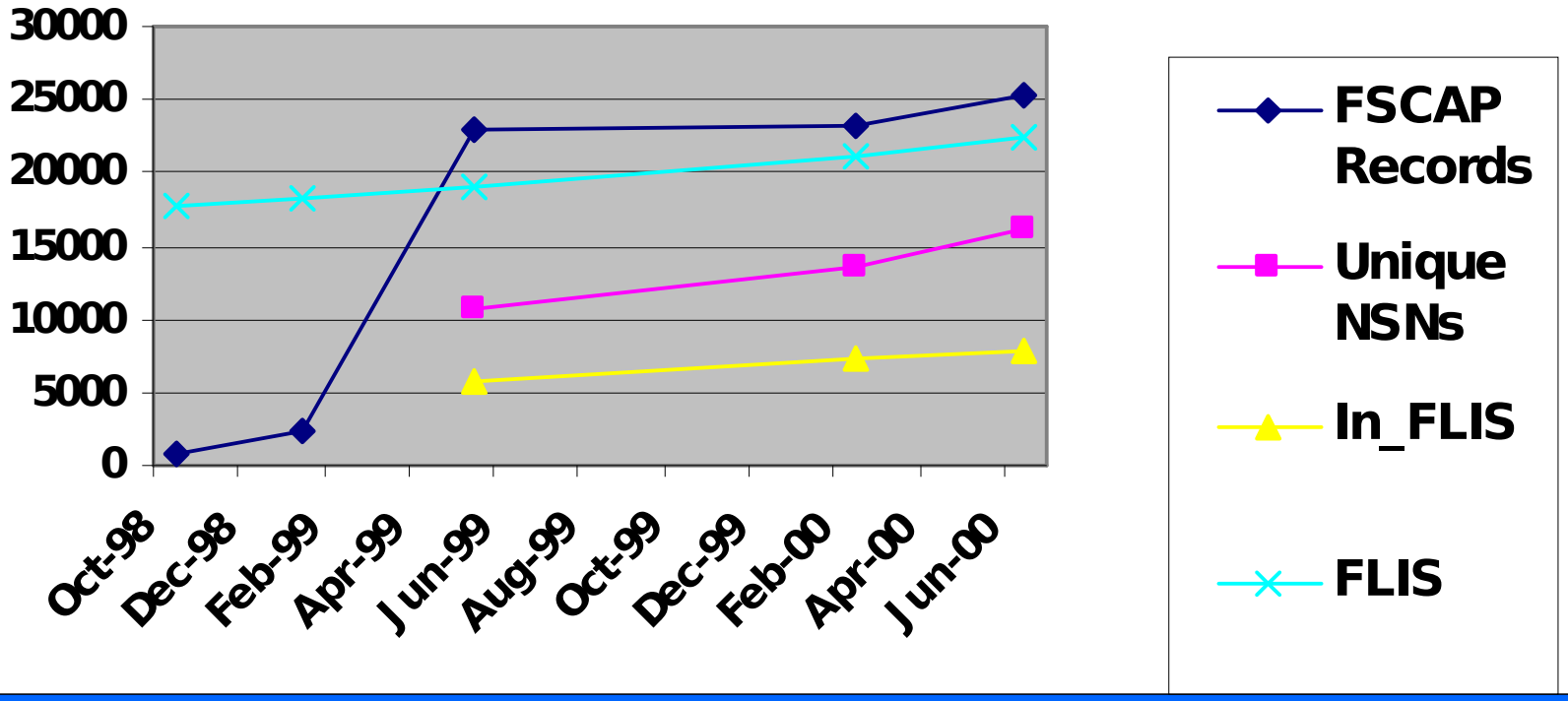
FSCAP DOD FLIS Data



FSCAP Identification by the Services

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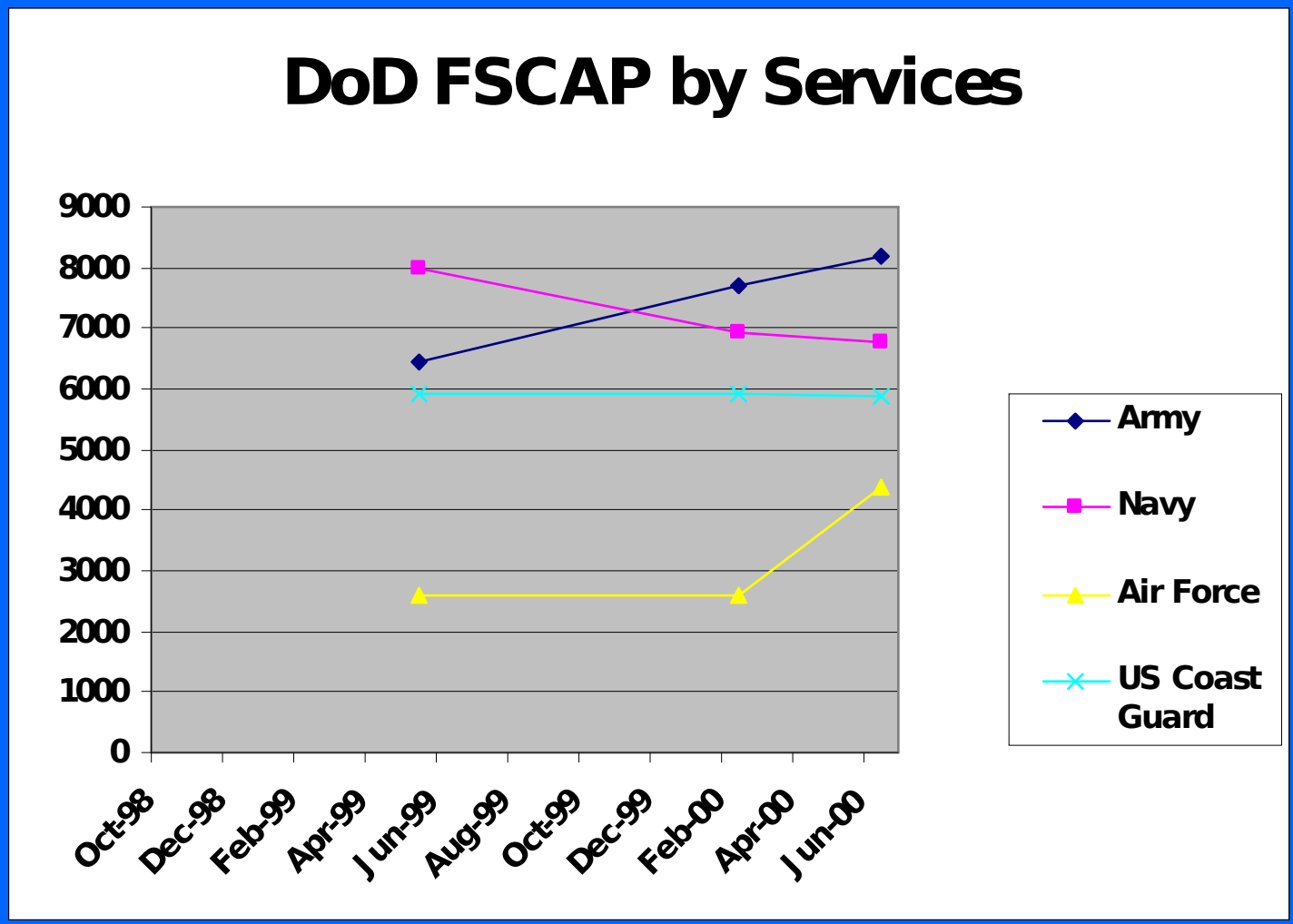

FLIS FSCAP Statistics

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Count Of FSCAP NSN in FLIS

23,298

Army	Navy	Air Force	DLA	Unknown	Totals
2,937	12,801	1,872	5,183	505	23,298
13%	55%	8%	22%	2%	100%

FLIS-FSCAP NSNs in DoD FSCAP

7,951

Army	Navy	Air Force	DLA	UnKnown	Totals
2,603	1,466	1,360	2,093	429	7,951
89%	11%	73%	40%	85%	34%

Data current as of Sept 30,.

DOD FSCAP MANAGED NSNs

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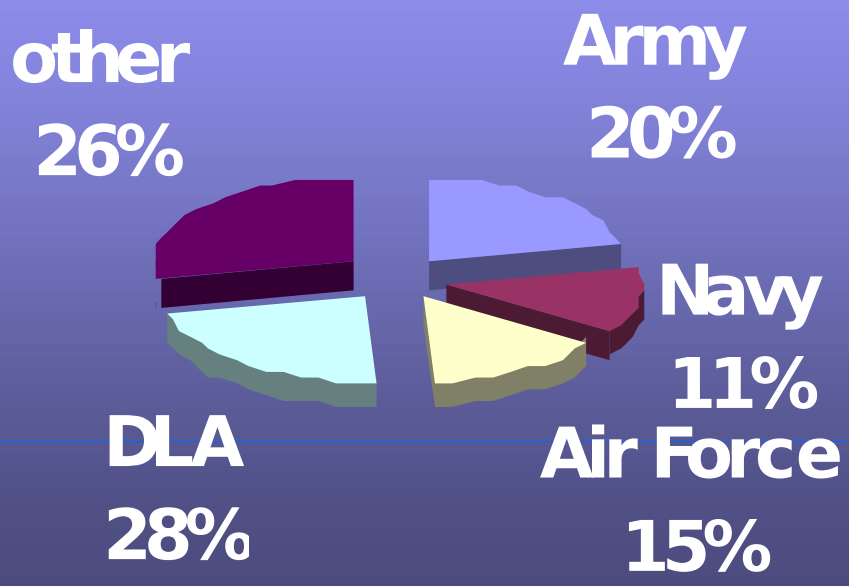
FSCAP by Item Management



DoD FSCAP Program Policy
Procedures

- C6.5.2.2. **Only the inventory control point** having management responsibility for an item may designate it as “FSCAP.”

- C6.5.2.3. Services desiring to have an item they do not manage designated FSCAP must **coordinate the request with the managing inventory control point.**

DoD FSCAP Program Policy

Procedures

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- C6.5.2.4. The DoD Components shall designate an **aircraft airworthiness authority** who has design and configuration cognizance. During the acquisition of a FSCAP, any change of design or configuration shall require the concurrence of the design authority.
  - DLA will use its “Request for Engineering Support “ DLA Form 339 to confirm the current design and configuration with the responsible ESA IAW DLA Directive 3200.1 Engineering Support for Items Supplied By DLA.

DoD FSCAP Program Policy
Procedures

- C6.5.2.5. The **acquisition specifications** for FSCAP shall have this notification on the title page: ***"This specification is for a Flight Safety Critical Aircraft Part (FSCAP) and acquisition process must comply with the DoD Materiel Management Regulation - DoD 4140.1-R."***

DoD FSCAP Program Policy
Procedures

- C6.5.2.6. Where practical, **reparable FSCAPs shall be managed and tracked** throughout their life cycle by serial number.

- C6.5.2.7. The minimum documentation requirements for **used FSCAPs** are, as follows:

DoD FSCAP Program Policy
Procedures

- C6.5.2.8. The **minimum documentation** requirements for **new FSCAPs** are, as follows:

- C6.5.2.9. All **historical documentation** shall go with individual FSCAP items when they are shipped to another user, to maintenance, or to DRMO for disposal.

DoD FSCAP Program Policy
Procedures

- C6.5.2.10. The DUSD(L) shall establish and maintain FSCAP policy and ensure DoD Component compliance with that policy.

- C6.5.2.11. The DoD Components shall:
  - Use FSCAP definition.
  - Establish process to identify and code the FLIS items as FSCAP.
  - Acquire FAA Form 8130-3 for dual use items from OEMs.
  - Provide data.

DoD FSCAP Program Policy
Procedures

- C6.5.2.12. <u>The DLA Shall Do the Following</u>:
  - Obtain data
  - Supply only safe items for installation on military aircraft.
  - Dispose of FSCAP properly.

SIMPLIFIED PROCESS

DSCRichmond

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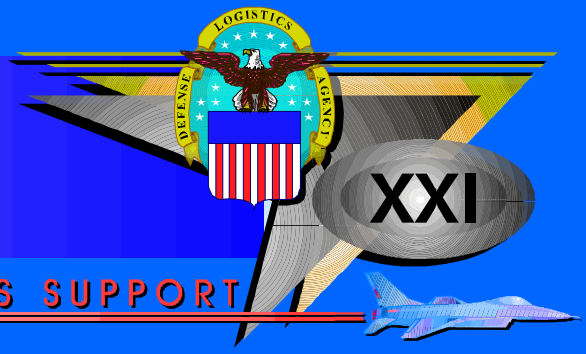

- Services identify FSCAPs
- Services provide Technical Data Packages to PICAs to buy only “Safe” FSCAPs
- PICA codes FLIS records
- DRMOs mutilates at end of life

DLA Weapon Systems Database

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IN_WSDC	SVC	Sum Of Count Of IN_WSDC	% of DLA Items Not in the Weapon Systems Database
TRUE	AF	382	
TRUE	ARMY	1,349	
TRUE	NAVY	127	
TRUE	USCG	1,553	
FALSE	**AF**	162	30%
FALSE	**ARMY**	94	7%
FALSE	**NAVY**	43	25%
FALSE	**USCG**	112	7%

Data as of October 2000

Conclusions

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- The identification of FSCAP is an on-going process. Not a one-time ad hoc action. Quarterly up-dates or validations are needed.

- The FSCAP MM program is “DoD Program” that the Service’s should use to identify their items that:
  - have a “Mishap Severity Failure Mode” of “Catastrophic”, or “Critical”
  - are a single point failure, with cascading catastrophic effect on the end item. (MIL-STD-882 System Safety Program)

- The Services’ engineering support activities (ESAs) continue to imply, recommend and direct that non-listed items be classified as FSCAP. These recommendations must be validated prior to the sending of the ESR back to DLA. The ESA recommendation should be:
  - either validated with the NSN at issue being added to the Services’ list of FSCAP and provided in their quarterly update,
  - or denied with a rationale to their ESA why the item is NOT to be classified as FSCAP.

Conclusions

- The identification, documentation and communication of CRITICAL design and acquisition CHARACTERISTICS and other acquisition requirements is the responsibility of the Services' ESAs and should be communicated to the PICA via a Technical Data Package (IAW MIL-DTL-31000).

- The Technical Data Package should at least include:
  - FSCAP CRITICAL CHARACTERISTICS, qualification, approved sources, acquisition strategy, quality assurance and control measures, FAT approval authority and all other contract processing procedures.

- The missing communications link between the cognizant engineering authority (aircraft airworthiness authority) and the responsible supply and buying activities is the single document that summarizes the critical engineering, design and acquisition characteristics.
  - An example of such a document is the Army Aviation & Missile Command's Spares Technical Data Package.